

## **Global Technique in Seismic Interpretation for Reservoir Detection and Characterization**

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### **Abstract**

This paper presents how a global method in seismic interpretation can facilitate and improve processes in exploration and development. The relative geological time (RGT) volume is obtained directly during the seismic interpretation phase by auto tracking all possible horizons within the seismic volume and refining their relationships. It provides a new way to perform a stratal slicing into the seismic volume even in regions, where classical techniques are limited. We have applied this workflow; combined with spectral decomposition to reveal at high resolution turbidites channels in the Exmouth Sub-Basin, located offshore West Australia.

By analyzing the variations of the RGT model in 3D, new attributes enhance faults even in zones presenting a low signal noise ratio, where classical seismic attributes are almost blind. This workflow was used in the North Sea, K05 block, to reveal complex faulted deposits. Finally, in the same region, the RGT model and the seismic data were used to populate acoustic impedance values recorded along wells using a co-kriging algorithm. The results allowed to better characterize heterogeneities variations at a reservoir scale.

This novel methodology shows a potential to reduce the time cycle in the exploration for the prospect identification but also more control for advance studies in reservoir characterization, seismic inversion and geomodeling.